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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/477,703 06/07/95 HINDERKS

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QM02/1025

EXAMINER

KAMEN, N

ART UNIT

PAPER NUMBER

3747

DATE MAILED:
10/25/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

847703

Applicant(s)

Hindorfs

Examiner

Kremen

Group Art Unit

3747

--The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address--

Period for Response

3

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 10/6/00
- ☒ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 54-71, 75, 76, 78, 80-87, 89-92, 98-104, 106-108, 111-114 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☐ Claim(s) _____ is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

see ACTION

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of References Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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DETAILED ACTION

Drawings

1. Claims 81 and 102 set forth a filamentary material within the piston-where is this shown?

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 61, 66-70, 75, 76, 78, 80, 83, 86, 89-92, 98, 99, 108, 112-115, are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Goldsborough. Brown shows the toroidal working spaces defined by a piston and cylinder. However, the cylinder is made of metal. Goldsborough is merely cited as an example of the well known use of ceramic materials in engines so as to improve efficiency. The working element is coated with ceramic material and a fasteners 16 under tension are provided. Likewise, the cylinder has ceramic liners 20 assembled by fasteners (see 4 bolts mounted in a mirror image) under tension. To modify the piston and cylinder of Brown to be assembled with ceramic liners and consequently the necessary fasteners would have been obvious to one of ordinary skill in the art in view of Goldsborough so as to improve engine efficiency. In regard to claims 89-92, to use a piston/cylinder assembly in any of the recited power systems would have been obvious. In regard to claims 98 and 99, the depressions read on

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common manufacturing intolerances. A common spark plug reads on the electric circuit in the ceramic.

4. Claims 62, 63, 106, 126, 131, 141, 146, 151, 156, 161, are rejected under 35

U.S.C. 103(a) as being unpatentable over Brown in view of Goldsborough as applied to claim 61 above, and further in view of Nallinger.

It would have been obvious to located the engine of Brown in the noise deadening housing of Nallinger so as to reduce objectional noise levels. The foam material is deemed inherently thermally insulative.

5. Claims 82, 103, 118, 128, 133, 136, 138, 143, 148, 153, 158, 163, 166, 168, are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Goldsborough as applied to claims 75, 106 above, and further in view of Berger

Berger disclose the use of catalytic filamentary materials 23 for treating the exhaust of an engine and to apply its use toward the engine of Brown would have been obvious to one of ordinary skill in the art. The phrase "at least partially surround" is broad enough to read on the catalyst being located anywhere.

6. Claims 121 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Goldsborough and Berger as applied to claim 118 above, and further in view of Nallinger as applied above.

7. Claims 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Goldsborough and Berger as applied to claim 118 above, and further in view of Hoyt.

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Hoyt shows the use of a scotch yoke and two oppositely rotating crankshafts to minimize vibration and to do likewise in Brown would have been obvious to one of ordinary skill in the art.

8. Claims 184, 185, 192, and 193 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Hoyt as applied above.

9. Claim 186 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Hoyt as applied to claim 184 above, and further in view of Nallinger as applied above.

10. Claims 187-191 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Hoyt as applied to claim 184 above, and further in view of Goldsborough as applied above.

11. Claim 194 rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Hoyt as applied to claim 184 above, and further in view of Berger as applied above.

Allowable Subject Matter

12. Claims 54, 55, 60, 107, 111, 116, 117, 119, 120, 122, 124, 125, 127, 129, 130, 132, 134, 135, 137, 139, 140, 142, 144, 145, 147, 149, 150, 152, 154, 155, 157, 159, 160, 162, 164, 165, 167, 169, 172, 175, 179, 181-183 are allowed.

13. Claims 64, 65, 71, 81, 84, 85, 87, 100-102, 104, 170, 171, 173, 174, 176, 177, 178, 180 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reynolds shows a piston assembled by a fastener under tension. Boden shows filamentary material surrounding a cylinder. Brown'855 shows another engine with toroidal chambers. Standhardt shows an engine with fasteners under tension and tubes. U.K. '712 shows a thermal housing around a cylinder.


15. It would be expedient to have presented the claims in sets rather than having sequential claims dependent on different independent claims. The current claim numbering makes determining dependency cumbersome.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Inquiries concerning the examiner's action should be directed to Noah Kamen at (703) 308-1945. The supervisory examiner, Henry Yuen, can be called at 308-1946. Fax is 308-7766. Questions of a general nature concerning the application should be directed to the group receptionist at 308-0861.



NOAH KAMEN
PRIMARY EXAMINER
ART UNIT 3747

October 17, 2000